

### **REMARKS**

Claims 1-7, 10-18, and 21-39 were considered in the Office action dated June 2, 2005, and were rejected under 35 U.S.C. 103(a). Each of independent claims 1, 16, 18, and 33 stands rejected as being unpatentable over **Thirion** (WO98/53426, U.S. Patent No. 6,373,998) in view of **Balas** (US2002/0007123).

Each of the dependent claims stands rejected as being unpatentable over **Thirion** and **Balas**, or over **Thirion** and **Balas** in further view of one or more of the following documents:

**Butler** (U.S. Patent No. 5,267,179);  
**Blair** (U.S. Patent No. 6,277,067);  
**Utzinger** (U.S. Patent No. 6,766,184);  
**Burl** (U.S. Patent No. 6,011,596); and  
**Uppaluri** (U.S. Patent No. 6,466,687).

Applicants do not concede that each of the above documents are prior art documents with respect to this case, and Applicants respectfully reserve the right to establish an earlier priority date where applicable and allowable.

Without acquiescing to the rejections, Applicants cancel all currently pending claims and present new claims 40-70. These claims are supported in the application as originally filed, for example, in original claims 1-39, in the "Summary" section at paragraphs [0009] to [0028], in the "Description of the Illustrative Embodiment" section at paragraphs [0093] to [0098] and [0149] to [0156], in the Figures, and elsewhere in the application as originally filed. Claim 70 is further supported, for example, in U.S. Provisional Patent Application No. 60/353,987, which is incorporated by reference in the application as originally filed. No new matter is added. Following entry of this paper, claims 40-70 will be pending.

#### **Independent claim 40 is patentable in light of the cited art**

None of the cited art listed above, alone or in combination, teaches or suggests all of the limitations of independent claim 40. For example, none of the documents teaches or suggests determining a measure of similarity of temporal responses following application of a chemical agent for the purpose of differentiating regions of a tissue.

**Thirion** does not teach or suggest determining a measure of similarity (or difference) of the temporal response of two regions of tissue as recited in claim 40. Although **Thirion** describes segmentation techniques (i.e. col. 1, lines 61-67, col. 4, lines 18-21, and col. 9, line 63 to col. 10, line 17), these techniques are only applied to *one image at a time*, for example, to determine a contour of an "area of interest" of a given image. **Thirion** teaches *independently* determining a contour for a first image and a contour for a second image, then **Thirion** determines a vector field deformation corresponding to the two contours. This is fundamentally different from the method recited in claim 40, because the vector field deformation described in **Thirion** does not indicate a difference between the temporal response of two fixed regions.

Rather, **Thirion** appears to determine how a *single* “area of interest” expands between two images. Thus, it is not possible to apply **Thirion** to determine similarity (or difference) of the temporal response of *two regions* of tissue, as in claim 40.

**Balas** also does not teach or suggest determining a measure of similarity (or difference) of the temporal response of two regions of tissue as recited in claim 40. **Balas** appears to track the changing intensity of light at a spatial point of a tissue; however, **Balas** does not determine a measure of similarity (or difference) between two regions of a tissue, and **Balas** does not differentiate regions of a tissue using such a measure. **Balas** appears to simply treat each point (pixel) independently (see page 6, paragraphs [0062] and [0063] of **Balas**).

None of the remaining cited references, alone or in combination, teaches or suggests determining a measure of similarity (or difference) of the temporal response of two regions of tissue, as recited in claim 40.

**Butler** does not obtain or analyze a temporal sequence of images. The “degree of similarity” (col. 2, line 52) in **Butler** does not relate to a difference in the temporal response of two regions (i.e. following application of a chemical agent to a tissue).

**Blair** does not obtain or analyze a temporal sequence of images. Furthermore, **Blair** does not disclose determining a measure of similarity between two regions based on similarity of the temporal response of the regions.

**Utzing** does not obtain or analyze a temporal sequence of images. The Office action identifies col. 6, lines 43-46, but this does not refer to a temporal sequence of images – there is no temporal component. Furthermore, **Utzing** does not disclose determining a measure of similarity between two regions based on similarity of the temporal response of the regions.

**Burl** appears to be related to video image motion compensation and does not teach or suggest determining similarity (or difference) of the temporal response of two regions of tissue.

**Uppaluri** does not obtain or analyze a temporal sequence of images. Furthermore, **Uppaluri** does not disclose determining a measure of similarity between two regions based on similarity of the temporal response of the regions.

Since the cited art teaches or suggests fewer than all of the limitations recited in claim 40, then claim 40 is patentable in light of the cited art, and Applicants respectfully request allowance of claim 40 in due course.

Claims 41-55 depend either directly or indirectly from independent claim 40 and, therefore, include all the limitations of claim 40. Therefore, Applicants respectfully request allowance of claims 41-55 in due course, as well.

Independent claim 56 is patentable in light of the cited art

As explained above with respect to independent claim 40, none of the cited art, alone or in combination, teaches or suggests determining a measure of similarity of the temporal response of two regions of tissue as recited in claim 56, step (b).

Since the cited art teaches or suggests fewer than all of the limitations recited in claim 56, then claim 56 is patentable in light of the cited art, and Applicants respectfully request allowance of claim 56 in due course.

Claims 57-69 depend either directly or indirectly from independent claim 56 and, therefore, include all the limitations of claim 56. Therefore, Applicants respectfully request allowance of claims 57-69 in due course, as well.

Independent claim 70 is patentable in light of the cited art

As explained above with respect to independent claim 40, none of the cited art, alone or in combination, teaches or suggests determining a measure of similarity of the temporal response of two regions of tissue as recited in claim 70, step (i).

Since the cited art teaches or suggests fewer than all of the limitations recited in claim 70, then claim 70 is patentable in light of the cited art, and Applicants respectfully request allowance of claim 70 in due course.

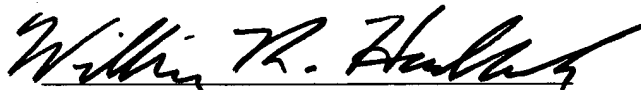
**CONCLUSION**

In view of the foregoing, Applicants respectfully request allowance of claims 40-70 in due course. The Examiner is hereby cordially invited to contact Applicants' undersigned representative by telephone at the number listed below to discuss any outstanding issues.

Respectfully submitted,

Date: September 2, 2005  
Reg. No. 53,002

Tel. No.: (617) 570-1013  
Fax No.: (617) 523-1231



William R. Haulbrook, Ph.D.  
Attorney for Applicants  
Goodwin Procter LLP  
Exchange Place  
Boston, Massachusetts 02109  
Customer No. 051414